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(73) Applicant KIM, Si Han

(72) Inventor KIM, Si Han

(52) PORTABLE DISPLAY CASE

### **【Abstract】**

The present invention generally relates to a portable display case, comprising: a first case provided with a receiving space inside, and receiving an LCD device in the receiving space; a second case coupled with the first case to be  
5 unfolded or folded, being provided with a receiving space inside, and receiving other LCD device in the receiving space; and a protecting cover disposed to cover exposed side portions of the LCD devices received in the first and second cases while the first and second cases are folded, wherein one end thereof is coupled with one side of the first case and the other end is coupled with one side of the  
10 second case. The present invention configured like above can protect the LCD devices from outer shock by covering the LCD devices exposed outside with the protecting cover when the first and second cases where the two LCD devices are received, respectively, are disposed while being folded together.

### **【Representative Drawing】**

Drawing 1

### **【Index】**

Display device, LCD, protecting cover

## **【Description】**

### **【Title of the Invention】**

5           PORTABLE DISPLAY CASE

### **【Brief Description of the Drawings】**

Fig. 1 is a perspective view illustrating an external shape of a first embodiment in accordance with the present invention;

10           Fig. 2 is an exploded perspective view of a main portion of Fig. 1;

Fig. 3 is a sectional view illustrating that an 'A-A' portion of Fig. 1 is cut;

Fig. 4 is a sectional view showing that a portable display case illustrated in Fig. 3 is unfolded;

15           Fig. 5 is a perspective view fully illustrating a cover member, a main portion of the present invention;

Fig. 6 is a perspective view illustrating a second embodiment in accordance with the present invention;

Fig. 7 is a sectional view illustrating that a 'B-B' portion of Fig. 6 is cut;

20           Fig. 8 is a diagram illustrating a third embodiment in accordance with the present invention; and

Fig. 9 is a diagram illustrating a fourth embodiment in accordance with the present invention.

### **【Detailed Description of the Invention】**

25           **【Purpose of the Invention】**

**【Background of the Invention】**

The present invention generally relates to a portable display case, and more particularly, to a portable display case for protecting an LCD screen, a display device, while being used as an output device of a PDA.

5 Generally speaking, the PDA(Personal Digital Assistant) is the output device used for an LCD. Such an output device(hereinafter, called a 'display device') is being miniaturized for an easy portability. However, the user tends to prefer a small device which can be conveniently carried, while requesting a product having a bigger screen such that the user can see a lot of output data at a time.

10 Thus, two separated display devices have been developed to configure a large screen by being unfolded when they are used, and to be folded in half when they are carried. It is desirable to receive the display devices in cases to protect an LCD screen.

15 However, though the display devices are protected to prevent their damage by the cases, there is a risk of damage all the time since sides of the display devices are structurally exposed from a part where the cases are folded.

### **【Summary of the Invention】**

20 It is therefore an object of the present invention to provide a portable display case for preventing display devices from being damaged by covering the display devices exposed outside cases while being folded.

### **【Detailed Description of the Preferred Embodiments】**

25 In order to accomplish the above object, the present invention comprises: a first case provided with a receiving space inside, and receiving an LCD device in the receiving space; a second case coupled with the first case to be unfolded or

folded, being provided with a receiving space inside, and receiving other LCD device in the receiving space; and a protecting cover disposed to cover exposed side portions of the LCD devices received in the first and second cases while the first and second cases are folded, wherein one end thereof is coupled with one side of the first case and the other end is coupled with one side of the second case.

Therefore, while the first and second cases are folded to overlap with each other, protecting portions of the protecting cover are disposed to cover one protruded side of the LCD device, protecting the LCD device. Also, while the first and second cases are unfolded, one side of the protecting portions of the protecting cover slides down a space portion of the second case to be received therein or disposed in extended state, thereby using the LCD device as an output device while the two cases are unfolded.

The present invention will now be described in detail with reference to exemplary preferred embodiments as illustrated in the accompanying drawings.

Fig. 1 is a perspective view showing a first embodiment in accordance with the present invention, Fig. 2 is an exploded perspective view showing an exploded main part of Fig. 1, and Fig. 3 is a diagram illustrating that an 'A-A' portion of Fig. 1 is cut.

A portable display case of the present invention is composed of: a first case(1) where an LCD device(2) is received; a second case(3) coupled with the first case(1) by a hinge, being coupled to be folded by overlapping with the first case(1), and receiving another LCD device(4); and a protecting cover(5) coupled with one side of the first and second cases(1,3), and protecting a side of an LCD device exposed outside.

The first case(1) is provided with a groove(1a) in length direction on a side where the LCD device(2) is exposed outside. The groove(1a) is used to combine

one side of the protecting cover(5), and desirably, it prevents the protecting cover(5) from being separated outside. That is, an outer length of the groove(1a) is smaller than an inner length thereof.

The second case(3) is coupled with the first case(1) by the hinge, and  
5 when they are unfolded, sides of the two LCD devices(2,4) are contacted to each other, thereby providing a large screen. The second case(3) is provided with a protecting cover receiving space portion(3a, hereinafter, a 'space portion') in length direction on a side where the LCD device(4) is exposed outside. Like shown in Fig. 3, the space portion(3a) is used to selectively fix and receive one side of the  
10 protecting cover(5). Desirably, it prevents the protecting cover(5) from being separated outside. And, the space portion(3a) has a certain length on a front side(displayed 'L' in Fig. 3) of the second case(3). The above space portion(3a), like shown in Fig. 4, is used to sufficiently receive one side of the protecting cover(5) aside when the first and second cases(1,3) are unfolded.

15 Like shown in Fig. 5, the protecting cover(5) consists of a bar-shaped supporting portion(5a) received in the groove(1a) of the first case(1), hooking portions(5b,5c) for extending both ends of the supporting portion(5a), and plural protecting portions(5d,5e,5f,5g).

The supporting portion(5a) is desirably in bar shape having a roughly  
20 round shape, and is made of a damage-free firm member.

It is appropriate that the hooking portions(5b,5c) are in round shape for a certain rotation by being received at both ends of the groove(1a) of the first case(1). Furthermore, the hooking portions(5b,5c) are hooked over side extension portions(1b,1c) of the first case(1), which are formed on both sides of the  
25 groove(1a), thereby combining together without being separated outside.

The protecting portions(5d,5e,5f,5g) are combined together by extending the supporting portion(5a) in width direction. At this time, the protecting portions(5d,5e,5f,5g) are combined with the adjacent other protecting portions(5d,5e,5f,5g) in a little flexible way. That is to say, it is desirable that each  
5 of the protecting portions(5d,5e,5f,5g) is smoothly received in the above space portion(3a) by connecting their adjacent parts with flexible synthetic resin materials. Certainly, each of the protecting portions(5d,5e,5f,5g) should be made of firm synthetic resin materials, protecting the LCD devices(2,4) exposed outside from outer shock.

10 In addition, it is proper that the protecting portions(5d,5e,5f,5g) are long enough to cover all the exposed parts of the LCD devices(2,4).

Likewise, the portable display case can protect the LCD devices from outer shock by covering the LCD devices(2,4) exposed outside with the protecting cover(5) while the first and second cases(1,3) are overlappingly folded for  
15 portability purposes.

Moreover, if a user rotates one of the first and second cases(1,3) at a hinge coupling portion of the first and second cases(1,3) in order to use the portable display device, sides of the two LCD devices(2,4) are contacted together like shown in Fig. 4, realizing one display device as widening a display area. At this  
20 moment, a part where a portion of the protecting cover(5) is received in the space portion(3a) of the second case(3) further goes into the space portion(illustrated in Fig. 4).

In this case, since parts for connecting each protecting portion(5d,5e,5f,5g) of the protecting cover(5) are flexible to some extent, it is possible to receive them  
25 in the space portion(3a).

Fig. 6 is a perspective view illustrating a second embodiment of the present invention, and Fig. 7 is a sectional view showing that a 'B-B' portion of Fig. 6 is cut, illustrating that a space formed in a second case(3) is protruded outside. It is because when an inner space of the second case(3) receives LCD devices and components for driving the LCD devices, the protruded space can prevent any interference in the components.

Since the operation of the second embodiment is identical with contents illustrated in the first embodiment, detailed explanations will be replaced with those of the first embodiment.

Fig. 8 is a diagram illustrating a third embodiment of the present invention, showing a structure of a protecting cover(5) and a fixed type to a first case(1) and a second case(3).

In the third embodiment of the present invention, the protecting cover(5) is coupled with an upper side of the first case(1) and a lower side of the second case(3), respectively, by a hinge. Such a third embodiment shows various types of the protecting cover(5) being fixed to the first and second cases(1,3). Protecting portions of the protecting cover(5) are combined with adjacent other protecting portions by hinges such as pins. The above combination of the protecting portions and the adjacent protecting portions through the hinges shows that it is possible to configure the present invention in other type of the first embodiment.

The third embodiment is similar to the first and second embodiments in terms of the first and second cases(1,3) being overlapped with each other, but it is different since a state of the first and second cases(1,3) being unfolded at a hinge coupling point shows that the protecting cover(5) is just extended on an outer side by rotating on the first and second cases(1,3) at the hinge coupling point. Thus, compared to the first and second embodiments, the third embodiment can use



spaces of the first and second cases(1,3) to the maximum while performing the same functions as the first and second embodiments.

Fig. 9 is a diagram illustrating a fourth embodiment of the present invention, showing a structure of a hinge coupling portion of a protecting cover(5) being  
5 received in a space portion by forming the predetermined space on a side of first and second cases(1,3) exposed to LCD devices. In addition, the fourth embodiment shows a structure of protecting portions of the protecting cover(5) being configured in two only, being coupled together by a hinge. Compared to  
10 other embodiments, the above fourth embodiment can increase beauty of an external shape while having similar functions, and furthermore it can decrease the number of components.

#### **【Effect of the Invention】**

Like mentioned so far, the present invention can protect LCD devices from  
15 outer shock by covering the LCD devices exposed outside with a protecting cover when first and second cases where the two LCD devices are received, respectively, are overlappingly disposed.

**WHAT IS CLAIMED IS:**

1. A portable display case, comprising:

5 a first case provided with a receiving space therein, and receiving an LCD device in the receiving space;

a second case coupled with the first case to be unfolded or folded, being provided with a receiving space inside, and receiving other LCD device in the receiving space; and

10 a protecting cover disposed to cover exposed side portions of the LCD devices received in the first and second cases while the first and second cases are folded, wherein one end thereof is coupled with one side of the first case and the other end is coupled with one side of the second case.

2. The portable display case of claim 1, wherein the first case receives one end of the protecting cover on one side, and comprises a groove coupled by a hinge.  
15

3. The portable display case of claim 1, wherein the second case comprises a protecting cover receiving space portion on one side such that one end of the protecting cover can slide down an inner side of the second case to be selectively received.

20 4. The portable display case of claim 1, wherein the protecting cover comprises:

a supporting portion received in the groove of the first case in length direction;

25 plural hooking portions received in the groove of the first case not to be separated outside by extending both ends of the supporting portion; and

plural protecting portions coupled with the length direction of the supporting

portion side by side, and being coupled such that connecting portions can be flexible.

5        5. The portable display case of claim 3, wherein the protecting cover receiving space portion is configured by protruding one side of the second case so as to prevent interference in components received within the second case.

6. The portable display case of claim 1, wherein the protecting cover is coupled with a side where the LCD devices of the first and second cases are exposed.

10        7. The portable display case of claim 1, wherein the protecting cover is coupled with an outer side of the first and second cases to cover the LCD devices while the first and second cases are overlappingly folded.

8. The portable display case of claim 1, wherein the protecting cover forms a space on a side where the LCD devices of the first and second cases are exposed, and is coupled such that the cover can be received in the formed space.

15        9. The portable display case of claim 4, wherein the protecting portions are connected by hinge pins such that they can be hinge-coupled together.